Beyond Altinn:
Publishing concepts in SERES

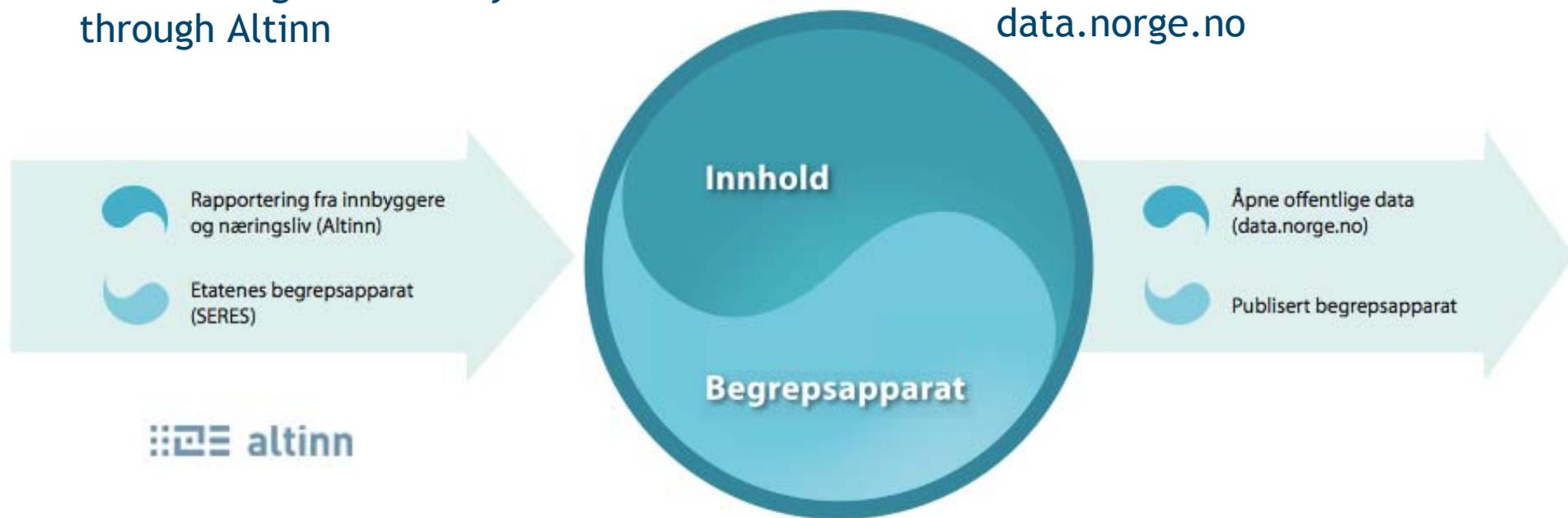... and referencing these in open data

Reporting and public open data

Today: Reporting in various forms (ftp, web, pdf, Altinn)

Tomorrow: Public sector is collecting data mainly through Altinn

Today: Data (interpreted) is mainly available on request or through tables on web

Tomorrow: Data available as raw data through data.norge.no

Rapportering fra innbyggere og næringsliv (Altinn)

Etatenes begrepsapparat (SERES)

Innhold

Begrepsapparat

Åpne offentlige data (data.norge.no)

Publisert begrepsapparat

altinn

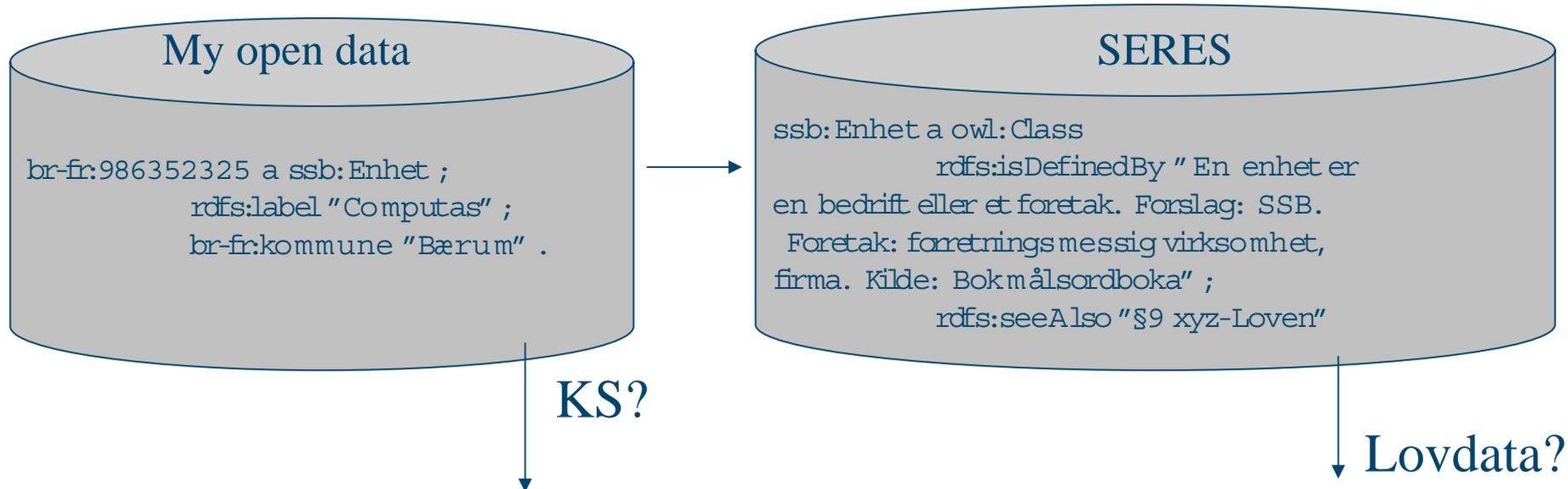Correct reporting and publishing requires uniqely defined concepts

Benefits

- Increased **innovation** with raw data that allows reuse

- A **methodical approach** that ensure correct licensing, privacy, laws and regulations

- Ensure a correct **interpreation of data** through a common management of the organization concepts

- Prepare for efficient **interoperability** in pubic sector

- **Transparency** - remove probability for corruption and improve communication with citizents.

QuickTime™ and a
decompressor
are needed to see this picture.

Reporting vs. Open Data

- Ensure correct intepretation by public sector while reporting in Altinn
  - SERES represents the concept (and definition) defining a data-field

- Ensure correct intepretation while publishing a registry to the public
  - SERES URIs can be referenced defining the concept the data field is addressing

My open data

```
br-fr:986352325 a ssb:Enhet ;
        rdfs:label "Computas" ;
        br-fr:kommune "Bærum" .
```

SERES

```
ssb:Enhet a owl:Class
        rdfs:isDefinedBy "En enhet er
en bedrift eller et foretak. Forslag: SSB.
 Foretak: forretningsmessig virksomhet,
firma. Kilde: Bokmålsordboka" ;
        rdfs:seeAlso "§9 xyz-Loven"
```

KS?

Lovdata?

Goals

- Merging and lookup and search based on identity

  - Lookup:
    - https://seres.no/guid/StatistiskSentralbyrå/Begrep/Dato/74 (the concept)
    - https://seres.no/guid/StatistiskSentralbyrå/Begrep (the concept model)
    - https://seres.no/guid/StatistiskSentralbyrå?search=Person (search)

- Annotating data with concepts

- Using established tools and standards
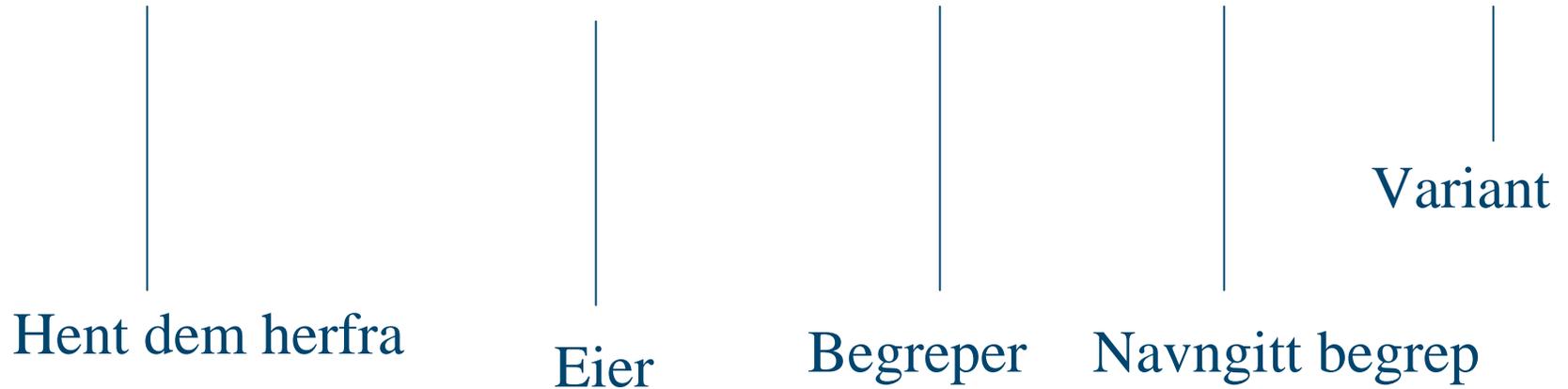 - Who you are gives you the right format

What is SERES concepts?

A SERES concept (norsk: Begrep) represents a definition, name, relation to other concept, and references to legal framework defining the concept

Each concept is identified by a globally unique identifier
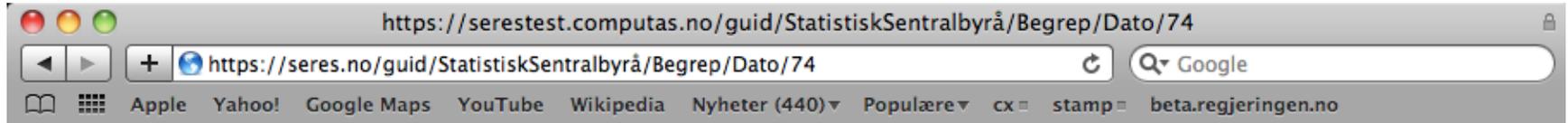
Unique identifiers for everything

http://seres.no/guid/StatistiskSentralbyrå/Begrep/Innsendelsesfrist/153

Hent dem herfra

Eier

Begreper

Navngitt begrep

Variant

…managed by each public administration, useable for everybody

Exporting SERES concept models to standardized tools for further analysis

- Publishing concepts
- A service responding to a URI
- Depending on who you are, you get various content types


```
<rdf:RDF
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:owl="http://www.w3.org/2002/07/owl#"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" >
  <rdf:Description rdf:about="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Innsendelsesdato/136">
    <rdfs:label>Innsendelsesdato</rdfs:label>
    <rdfs:subClassOf rdf:resource="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Dato/74"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Dato/74">
    <rdfs:label>Dato</rdfs:label>
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Innsendelsesfrist/153">
    <rdfs:label>Innsendelsesfrist</rdfs:label>
    <rdfs:subClassOf rdf:resource="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Dato/74"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Transaksjonsdato/134">
    <rdfs:label>Transaksjonsdato</rdfs:label>
    <rdfs:subClassOf rdf:resource="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Dato/74"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Ansattdato/100">
    <rdfs:label>Ansattdato</rdfs:label>
    <rdfs:subClassOf rdf:resource="http://seres.no/guid/StatistiskSentralbyrå/Begrep/Dato/74"/>
  </rdf:Description>
</rdf:RDF>
```

Concept model (norsk: Begrepsapparat, Begrepsmodell)

- Set of concepts in a particualar domain of interest (≈ Ontology)

- Owned by the public administration

- SERES tools (as explained earlier) allows defining concepts and annotating message models

- New! Exporting SERES concept models to standardized tools for further analysis (e.g. Protégé)

file.rdf (file:/usr/local/src/seres/trunk/Seresuttrekk/file.rdf) – [/usr/local/src/seres/trunk/Seresuttrekk/file.rdf]

◇ file.rdf (file:/usr/local/src/seres/trunk/Seresuttrekk/file.rdf)

| Active Ontology | Entities | Classes | Object Properties | Data Properties | Individuals | OWLViz | DL Query |

Asserted class hierarchy | Inferred class hierarchy

Asserted class hierarchy: Rapporttype

- ▼ ● Thing
  - ● Overtidstimer
  - ▼ ● Adresse
    - ● **Bedriftsadresse**
    - ▼ ● **ElektroniskAdresse**
      - ● **E-post**
      - ▼ ● **Telefonnummer**
        - ● **Telefaksnummer**
    - ▷ ● **FysiskAdresse**
  - ● Antall
  - ● Arbeidsforhold
  - ● Arbeidsskift
  - ● Avdeling
  - ● Begrep-guid1
  - ● Begrep-guid2
  - ▼ ● Beløp

Object property hierarchy | Data property hierarchy | Individuals

Object properties: adresse

- **adresse**
- **arbeidsforhold**
- **arbeidsskift**
- **avlønningsperiode**
- **datatype**
- **egenmeldtFjoråret**
- **egenmeldtPeriode**

Annotations | Data Property Usage

Annotations: vaktUtkallingHelligdag

Annotations (some annotations are hidden) ⊕

Characteri ▢▢▢▣

☐ Functional

Description: vaktUtkallingHelligdag

Domains (intersection) ⊕

● **Tillegg**   @ ⊗ ◉

Ranges ⊕

Equivalent properties ⊕

Super properties ⊕

Disjoint properties ⊕

Conclusion

- **Improve the quality**
  - Verify the concept scheme (norsk: begrepsapparatet)
    - Are there any logical errors
  - Inspect
    - Any orphan/gost concepts?

- **Manage concept definitions**
  - Manage the concept scheme
    - Name
    - Definition
    - References between concepts
    - Harmonizing and coordinating between agencies

- **Reuse**
  - Use identifiers everywhere
    - Annotate data
  - You do not know who is using your data, how can you ensure correct interpretation?